

18.01

Ship Nov. 29

Work Order ID 153633

153633

Page 1

Wednesday, November 23, 2016 10:01:04 A

Item ID: D2017-101 Accept *N900040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Tie Outboard STA 84

Start Date: 11/23/2016 Start Qty: 1.00 *1*

Required Date: 11/28/2016 Req'd Qty: 1.00 *1*

Reference: Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2017	Rev F								
100		0.00							
100									
Brake NC	Memo	0.00							
Brake NC	Punch tube type 304-2B Drill hole to .312" as per Dwg Deburr								
110	QC5- Inspect part completeness to step on W/O	0.00							
110									
QC	Memo	0.00							
Quality Control									
120	White Gloss(Ref:4.3.5.2) per QSI005 4.3-Steel	0.00							
120									
Powdercoat	Memo	0.00							
Powder Coating									

1 FF NOV 23 2016

1 38 9-89 NOV 23 2016

START: 10:25
O.I.T: 400°
FINISH: 10:55

1 16-11-24. 34 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Work Order ID 153633

Wednesday, November 23, 2016 10:01:04 A

153633

Page 2

Item ID: D2017-101 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Tie Outboard STA 84
Start Date: 11/23/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 11/28/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC3- Inspect Part Finish	0.00				1			DAS 38 9-89
130									
QC	Memo	0.00							
Quality Control									NOV 24 2016
140	Identify as per dwg & Stock Location: <u>5138</u>	0.00				1			DAS 6 9-89
140									NOV 25 2016
Packaging	Memo	0.00							
Packaging									
150	QC21- Final Inspection - Work Order Release	0.00							
150									16/11/28
QC	Memo	0.00							
Quality Control									DAS 21 9-89

NOV 25 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 			
Description Work Order Deviation				Disposition							
								Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____							
Misidentified	☐	Past Due	☐								

Picklist Print

Wednesday, November 23, 2016 10:01:09 AM

Page 1

Work Order ID: 153633

153633

Parent Item: D2017-101

D2017-101

Parent Item Name: Tie Outboard STA 84

Start Date: 11/23/2016

Required Date: 11/28/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP E02.06.18Added finishing level (Ref. ECN 435) KJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304TR0.750W.049		Purchased	No			100	f	208.9851	1.5	1.578947			

M304TR0 750W 049

304 RD Tube .750 x .049W

FF

NOV 23 2016

Location

Loc Qty

Loc Code

GA002

208.9851211

M134528

30.2105266

M134604

43.420524

M134824

5.8478935

M135093

33.68421

M135242

36.2852715

M135373

39.983907

M135709

5.1790537

M135857

14.3737348

1.578947

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

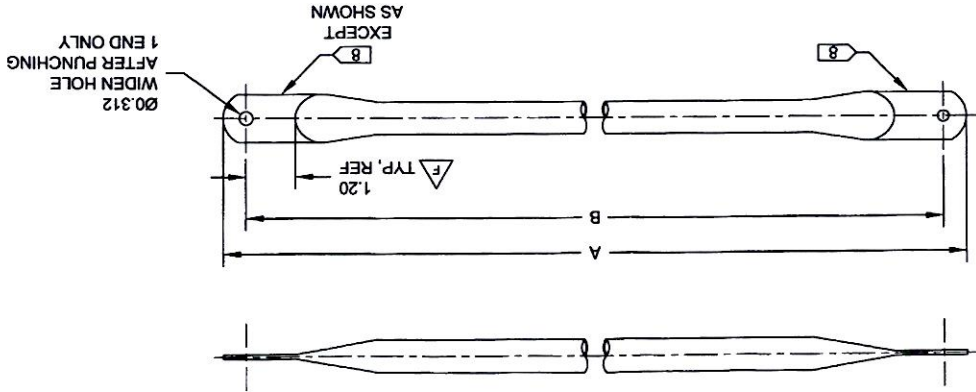
Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				OTHER : _____			

- NOTES:
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBE, Ø0.750 x 0.049 WALL
 - 2) FINISH: POWDER COAT WHITE (4.3.2) PER DART OSI 005 4.3
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D2017-XXX" USING FINE POINT PERMANENT INK MARKER
 - 7) WEIGHT: N/A
 - 8) PUNCH ENDS PER SPEC CONTROL DRAWING D2638.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 153633
16-11-23

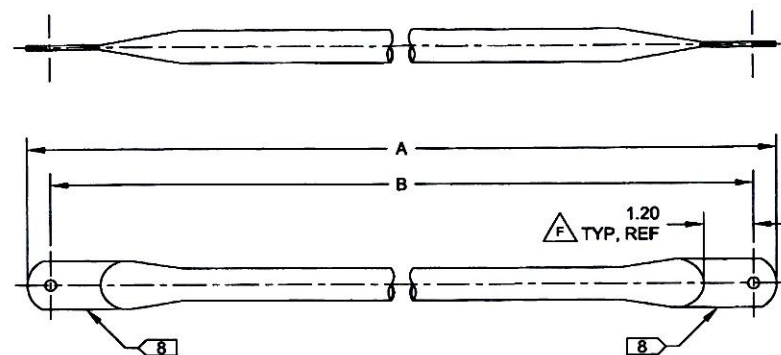
PART NUMBER	
D2017-101	16.93
D2017-103	17.94
D2017-113	20.50
	19.70
A	B

D2017-XXX STEP STRUT



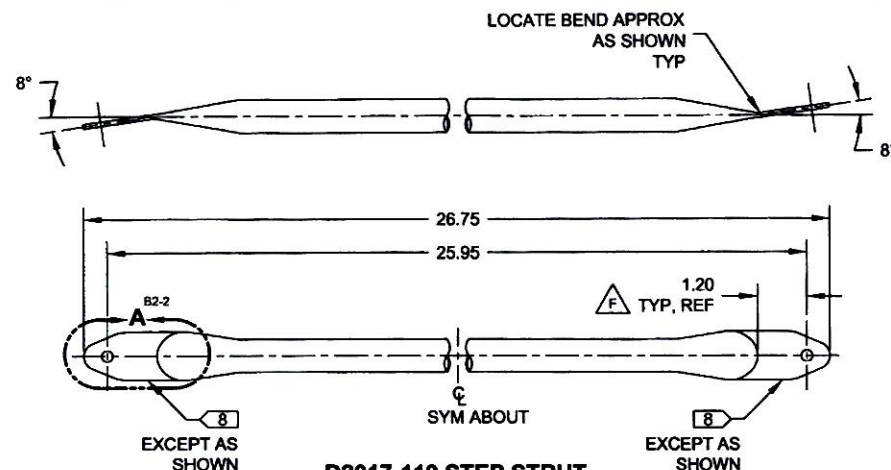
DATE	09.03.06
DESIGN	BW
DRAWN	AJS
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
TITLE	STEP STRUTS
SCALE	NTS
SHEET 1 OF 2	REV. F
DRAWING NO.	D2017
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
REV.	DATE
F	09.03.06
E	02.03.22
D	96.03.28
C	95.01.26
BW	
CP	
BW	
BW	
DATE	

RELEASED
02/04/16

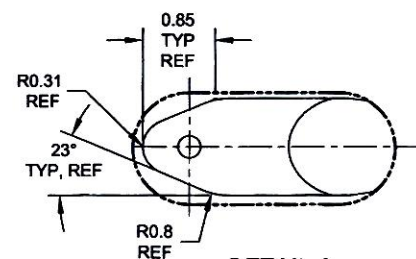


D2017-XXX STEP STRUT

PART NUMBER	A	B
D2017-105	14.95	14.15
D2017-107	15.61	14.81
D2017-109	13.93	13.13
D2017-111	15.30	14.50
D2017-115	12.42	11.62
D2017-117	13.86	13.06
D2017-121	12.30	11.50
D2017-123	12.92	12.12
D2017-125	19.55	18.75
D2017-127	20.30	19.50
D2017-129	31.43	30.63
D2017-131	19.68	18.88
D2017-201	21.31	20.51
D2017-203	16.39	15.59
D2017-205	16.53	15.73
D2017-207	13.85	13.05
D2017-209	15.64	15.33
D2017-211	15.67	14.87
D2017-213	15.82	15.02
D2017-215	16.47	15.67
D2017-217	16.70	15.90
D2017-219	13.65	12.85
D2017-221	13.58	12.78
D2017-223	12.95	12.15
D2017-225	13.99	13.19
D2017-227	30.67	29.87
D2017-133	30.66	29.86



D2017-119 STEP STRUT
(SHOWN PRIOR TO BENDING)



DETAIL A D4-2
TRIM AFTER PUNCHING PER DT8360
SCALE 2X

RELEASED
09/04/16

DESIGN	BW	DART AEROSPACE LTD	
DRAWN	A.S.	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D2017	REV. F
MFG. APPR.			SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		STEP STRUTS	NTS
DATE	09.03.06	COPYRIGHT © 1995 BY DART AEROSPACE LTD	

[illegible]

Engineering Approval: (If necessary)		Date:	
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Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	KJ	